

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of: Confirmation No.: 9742  
Jörg KOWALCZYK, *et al.*  
Serial No.: 10/555,714 Group Art Unit: 1623  
Filed: July 27, 2006 Examiner: Layla D. Bland  
For: METHOD FOR SELECTIVE CARBOHYDRATE OXIDATION USING  
SUPPORTED GOLD CATALYSTS

---

**VIA EFS-WEB**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**DECLARATION UNDER 37 C.F.R. §1.132**

Sir:

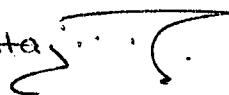
1. I, Dr. Alireza Haji Begli, a German citizen, residing at Gartenstraße 4, 67305 Ramsen, Germany, hereby declares as follows:
2. I am a co-inventor of the above-identified U.S. patent application and I make this declaration to support the patentability of the claims of the subject application. I am employed by Südzucker Aktiengesellschaft Mannheim/Ochsenfurt, which is the owner by assignment of the application. I have read and am familiar with the Office Action concerning this application issued by the U.S. Patent and Trademark Office on March 26, 2009.
3. I graduated from 1974 with a Graduate degree in Chemistry in 1983. I received a Doctorate degree in Chemistry from Technische Universität Braunschweig in 1988. I have 20 years experience in research and development as it relates to sugar derivatives and, in particular, with regard to the oxidation of sugars which is the subject of the presently claimed method.

4. I am informed by Counsel that an argument was made in a February 18, 2009 Amendment filed in this application in response to a previous U.S. Patent Office Action mailed November 18, 2008 that the application as originally filed, and in particular Example 3, provides evidence of improved durability by the catalysts taught for use in the presently claimed method over catalysts disclosed for use in the Biella et al. *Journal of Catalysis* article cited by the Patent Examiner for the purpose of rejecting the claims of our application. I note further in this regard the Examiner's objection at the bottom of p. 5 of the Office Action to the effect that the cited Example 3 of the application only provides data for the durability of 0.5% Au/TiO<sub>2</sub> catalyst and that such data is not commensurate in scope with the claims (which are not limited solely to the specific catalyst tested in Example 3).
5. In response, therefore, and to provide additional evidence to support our contention that all of the metal oxide supported catalysts recited for use in the presently claimed method would provide a surprising and unexpected improvement in 'durability' (i.e., over the catalysts disclosed in the references cited to reject our claims, particularly those of Biella et al.), by me or under my direction and control, a series of additional experiments has been carried out. The experiments demonstrate the unexpected improvement in durability also of various aluminum oxide supported gold catalysts in the C1 selective oxidation of sugars.
6. Table 1, provided as an attachment to this declaration, clearly demonstrates the constant activity, over 30 batches, of an Au/Al<sub>2</sub>O<sub>3</sub> catalyst, i.e., in accordance with the presently claimed method, having a wt. % of gold of 0.3. Additionally, Table 2 on the same attachment discloses a constant activity of an Au/Al<sub>2</sub>O<sub>3</sub> catalyst comprised of 1 wt % gold over 14 batches.
7. From Tables 1 and 2, therefore, it can be seen that even aluminum oxide supported catalysts according to the presently claimed method demonstrated a higher durability than those taught for use in the prior art relied upon to reject the

claims. These experimental results serve, therefore, to reinforce the showing provided in Example 3 of our application which demonstrates that TiO<sub>2</sub> based catalysts also provide such improved results. Taken in conjunction, the data in Example 3 of the application and in this declaration clearly demonstrate that both Aluminum Oxide and Titanium Dioxide based catalysts, i.e., several different types of metal oxide supported gold catalysts, provide unexpectedly improved results over the catalysts described in the Biella et al. prior art.

8. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further, these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 23.06.2009

By: 

Dr. Alireza Haji Begli

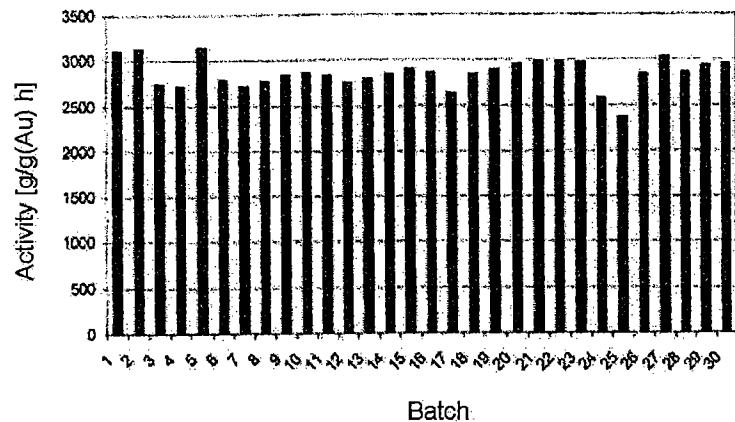


Table 1: durability of 0.3% Au/Al<sub>2</sub>O<sub>3</sub>

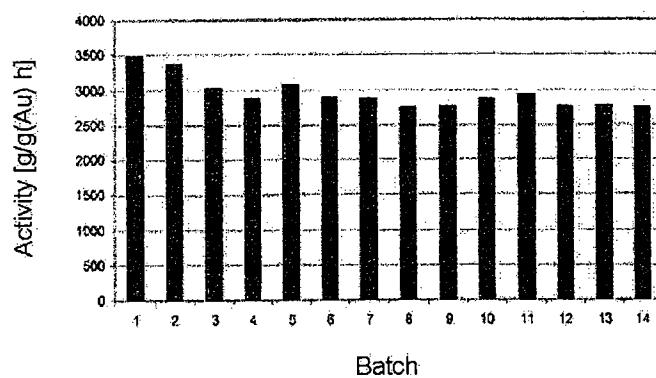


Table 2: durability of 1.0% Au/Al<sub>2</sub>O<sub>3</sub>